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CULTURAL RESOURCE INVENTORY
OF THE
SAN MIGUEL RESOURCE AREA,
WESTERN COLORADO

By
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and
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Prepared in compliance with
Bureau of Land Management
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University of Colorado
Mesa Verde Research Center
Boulder, Colorado

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INTRODUCTION

This report details a cultural resource inventory of the San Miguel Resource Area in southwestern Colorado, conducted by the University of Colorado Mesa Verde Research Center for the Bureau of Land Management, Montrose District. Work was performed between May and September 1977, under terms of the BLM Purchase Order No. YA-510-PH7-43 (University of Colorado Account No. 1704-42). Field work was carried out between May 30 and July 5.

The report consists of two parts - a review of existing archaeological data on the resource area, and the results of a sample oriented field inventory. The objective of the field inventory was to provide data for making estimates of the number, nature, and distribution of archaeological sites in the resource area.

A total of 89 sites and 50 isolated artifacts were located and recorded as a result of the sample inventory. Of the sites, 87 were prehistoric and two sites were historic (Anglo) structures. In addition, two prehistoric sites are herein reported which were not a part of the sample. C. T. Hurst's Tabeguache Cave 2 was visited and assigned a state site number. One isolated artifact and site 5SM94, an extensive lithic area on the rim of Naturita Creek, were recorded by the authors during a well-site inspection made at the request of the Shell Oil Company.

Field work, laboratory analysis, and report preparation was carried out by the authors, who served as co-field directors.

Dr. David Breternitz was Principal Investigator for the project. We are grateful for his suggestions and advice during the project, and

PERMANENT SITE NUMBERS

Site number as it is
referred to in this
report

Permanent, correct
site number

5MN770		5MN790
5MN790		5MN505
5MN791	5MN792 = 869	5MN506
5MN793		5MN870
5MN794		5MN871
5MN795		5MN872
5MN796		5MN873
5MN797		5MN874
5MN798		5MN875
5MN799		5MN876
5MN800		5MN877
5MN801		5MN878
5MN802		5MN879
5MN803		5MN880
5MN804		5MN881
5MN805		5MN882
5MN806		5MN883
5MN807		5MN884
5MN808		5MN885
5MN809		5MN886
5MN810		5MN887
5MN811		5MN888
5MN812		5MN889
5MN813		5MN890
5MN814		5MN891
5MN815		5MN892
5MN816		5MN893
5MN817		5MN894
5MN818		5MN895
5MN819		5MN896
5MN820		5MN897
5MN821		5MN898
5MN822		5MN899
5MN823		5MN900
5MN824		5MN901
5MN825		5MN902
5MN826		5MN903
5MN827		5MN904
5MN828		5MN905
5MN829		5MN906
5MN830		5MN907
5MN831		5MN908
5MN832		5MN909
5MN833		5MN910
5MN834		5MN911
5MN835		5MN912
5MN836		5MN913
5MN837		5MN914

appreciative of the opportunities he has provided.

We would like to thank Dr. Douglas D. Scott, BLM Montrose District archaeologist, whose interest in and ideas about the area proved stimulating.

We would also like to thank Kellie Masterson for the ceramic analysis and for her patience with our innumerable questions concerning artifact analysis, Bertrand de Peyer for printing the site photographs and taking the artifact photographs, and Rita Alter for her assistance with typing and report preparation.

PART I

EXISTING DATA INVENTORY

LOCATION OF STUDY AREA

The study area consists of all Bureau of Land Management lands in the San Miguel Resource Area, Montrose District, Colorado. The San Miguel Resource Area is bounded on the west by the Utah border and extends east as far as the county line separating Ouray County from San Miguel and Montrose Counties. The northern boundary is formed by the Uncompahgre National Forest and the Mesa County line, however the resource area does extend into Mesa County at one point, following the boundary of the B.L.M.'s Montrose District. The southern boundary is in part the San Miguel and Dolores County line, and also the boundary of the San Juan National Forest. The resource area includes the central portion of Dolores County which is surrounded on the south, west, and east by the San Juan National Forest. (See Fig. 1)

ENVIRONMENT

The San Miguel Resource Area lies within the Colorado portion of the Plateau province. Geological information is from Coffin (1921), and from U.S.G.S. Geologic Quadrangles by Haynes, Vogel, and Wyant (1972) and Williams (1964). The surface of the area is characterized by valleys and ridges formed by synclinal and anticlinal folds and by faulting. Streams have entrenched and formed canyons from the sandstone and emphasized the synclinal and anticlinal valleys and crests. Most of the exposed bedrock in the area is sedimentary, ranging in age from the

Pennsylvanian Carboniferous to late Cretaceous. The predominant rock is sandstone, followed by shale. The floors of Paradox Valley and Gypsum Valley are Carboniferous beds of the Hermosa Formation. These beds are covered by more recent alluvium and eolian deposits which comprise the surface.

Triassic and Jurassic Formations occur throughout the area, particularly Wingate Sandstone, the Morrison Formation, and Entrada Sandstone, however Cretaceous Age sandstones and shales (Mesa Verde Group Sandstone, Mancos Shale, and some Dakota Sandstone) appear to be the most common.

The San Miguel Resource Area is drained by the San Miguel-Dolores River system. The San Miguel River has its source in the San Juan Mountains east of Telluride, and flows northwest to its confluence with the Dolores River west of Uravan. The San Miguel River is fed by streams flowing north from the San Miguel Mountains, and by streams flowing south south west from the Uncompahgre Plateau. The Dolores River begins on the southern flanks of the San Miguel and San Juan Mountains, flows south and then loops back to the north, flowing through the western portion of the San Miguel Resource Area. The Dolores River continues to the north and west to its confluence with the Colorado River in Utah.

The major plant communities in the San Miguel Resource Area are Sagebrush-Shrubland and Pinyon-Juniper Forest. Occasional Ponderosa Pine are found close to springs on the Mesa Tops, and on the higher elevations of the easternmost portion of the resource area.

SOURCES CONSULTED

During the course of the literature search, the following institutions and organizations were consulted for information on recorded archaeological resources in the San Miguel area and adjacent regions:

1. University of Colorado Mesa Verde Research Center Library was consulted for reports on previous surveys in the area.
2. University of Colorado Libraries were searched for published articles concerning history and archaeology of the area.
3. Office of the State Archaeologist of Colorado: The site survey files were checked for previously recorded sites in the area.
4. Montrose District Office of the Bureau of Land Management was consulted for information on sites in the area.
5. State Historical Society of Colorado: The collections made by the Woodbury's (1932) from Paradox Valley were examined. The stone and bone artifacts were inventoried by Toll (1977:91-95, 243-256), but the ceramics could not be located at that time. The ceramics were located during our visit, and were inventoried by Kellie Masterson.
6. Denver Museum of Natural History: The collections made by the Huscher's from western Colorado, were examined. No locational information was found about sites in the resource area recorded by the Huscher's (1943).
7. Western State College, Gunnison: The C.T. Hurst Collection, including notes and photographs of Hurst's (1940-48) excavations in the area, were examined. Hurst (1945B) reported on making surface collections of artifacts around Tabeguache Creek, but no information was found concerning specific locations of areas collected.

ARCHAEOLOGICAL OVERVIEW

The majority of the San Miguel Resource Area remains archaeologically unexplored. The first site recorded in the area was a petroglyph panel near La Sal Creek Canyon recorded by Jeancon (1926) on his survey of rock art in western Colorado. In 1931 George and Edna Woodbury conducted a survey of Paradox Valley and surrounding areas for the State Historical Society of Colorado. They reported (1932) finding 16 ruins in the valley which they describe as being Pueblo 1-2 in age and culture. One ruin of at least 4 rooms was tested, with 2 rooms being excavated. Stone and bone artifacts were recovered as well as ceramics of Pueblo 1-2 style. Other rock shelters and circular stone structures were also described, as was a ruin on the rim of Naturita Canyon. This site has been assigned a state site number, 5SM57(Toll 1976). The site (5MN191) tested by the Woodbury's has been recently further excavated, however little information other than an analysis of the faunal remains(Kasper 1977) is available. A pit structure under the surface masonry structure is mentioned, and both Pueblo and Fremont occupations are postulated. Kasper states that Big Horn Sheep and rabbits were the most important game animals and associates the heavy reliance on animal resources with the Fremont Culture.

C.T. Hurst of Western State College excavated several sites in the resource area during the 40's. Tabeguache Cave 2 had apparently been occupied at three different times - most recently by the Utes, preceeded by nomads with Basketmaker 2 material obtained through trade or conquest. This occupation contained reed projectile shafts, corn, a slab lined cist, and 2 rod and bundle basketry. An earlier occupation was characterized by a particular type of projectile point (labelled Tabeguache Point by Hurst), bifacial knives, and small manos and milling stones. (Hurst 1943,44,45).

Two rooms at Tabeguache Pueblo were excavated (Hurst 1946), and basin metates, corner-notched points, and ceramics were recovered. The ceramics included corrugated and Black on White ware, and Hurst regarded the ruin to be of Pueblo 1-2 affiliation on the basis of these ceramics. Dolores Cave (Hurst 1947) contained a slab lined hearth, basketry and other perishable objects and a few stone tools. Hurst also excavated at several sites adjacent to but not in the resource area. Tabeguache Cave 1 (1940, 1941, 1942) contained corn and squash, cordage, fur cloth, square toed sandals, basketry of a single rod and bundle type, and bone and stone artifacts. Hurst attributed this to a Basketmaker 2 occupation. Cottonwood Cave and Pueblo were also partially excavated (1948). The cave had slab lined cists, square toed sandals, cordage, and metates and was called a Basketmaker 2 site. In addition, shelled and unshelled corn was recovered from the cave. Cottonwood Pueblo was similar to Tabeguache Pueblo and labelled a Pueblo 1-2 site.

The Huscher's (1943) have reported sites in the San Miguel Resource Area with circular dry-laid stone structures. They attribute these sites to athapascan migrations and label them hogans. The locations of the sites are unknown.

Schroeder (1964) classifies the structural sites in the area as being Pueblo, and attributes their presence to the general expansion of Anasazi culture occurring in Pueblo 2 times. He credits this expansion to the introduction of a new and superior type of maize, Harinoso de Ocho, which was suited to a greater environmental range than previous types. Towards the end of the Pueblo 2 period ecological changes in this already marginal region made cultivation an impractical pursuit.

The only corn recovered from the area in sufficient quantity and

state of preservation is a cache from Hurst's Cottonwood Cave. Edgar Anderson analyzed the corn (Hurst and Anderson:1949) and while certain traits show a resemblance to Basketmaker corn, other characteristics are more like prehistoric corn from coastal Peru.

That the structural sites represent an Anasazi migration into the area, followed by Fremont peoples, cannot presently be determined. The absence of kivas, differences in architecture, and the relative scarcity of ceramics coupled with the large amount of stone artifacts and faunal remains recovered from the sites tends to point towards an affiliation with the Fremont culture; or the adoption of various specific Anasazi and Fremont traits by indigenous hunter-gatherers in the area.

Toll (1977) has recently synthesized archaeological data on the Dolores River, which runs through the resource area. A resume of work along the river is presented, as well as sections on rock art, artifacts, site types and functions. The study is partially based on a survey of the river conducted in 1975 for the BLM. Sites recorded in the San Miguel Resource Area are SSM34,37,38-50,55,56 and 5MN433-443.

HISTORIC OVERVIEW

The first known European to enter the San Miguel Resource Area was Juan Maria de Rivera. In 1765, on a trading and trapping expedition out of Sante Fe, he followed the Dolores River and travelled along the Uncompahgre Plateau to the Gunnison River (O'Neil 1972:7). In 1776 the Dominguez Escalante expedition followed a similar route to the Gunnison River.

The Spanish expeditions found the Ute Indians inhabiting the central and western portions of Colorado, and eastern Utah, as well as northern New Mexico. The Utes were comprised of seven loosely organized bands,

speaking mutually intelligible dialects of the Shoshonean subfamily of the Uto-Aztecan language family (Kroeber 1908:74). Of the seven bands, the Tabeguache or Uncompahgre Utes were probably the most frequent users of the San Miguel Resource Area, although the different bands shared territories and were socially interactive. The Utes travelled on a seasonal cycle of hunting and gathering, staying in family units from early spring until late fall, and combining into groups during the winter for social and ceremonial functions. With the acquisition of horses buffalo hunting became possible and larger groups stayed together year around. Both Tyler's (1964) and Stewart's (1971) bibliographies are recommended as guides to the literature concerning the Utes.

American trappers and traders were in the area by the early 1900's. In March of 1876 gold was discovered in the San Miguel River by S.H. Baker (Wolfe 1949). A year later the town of Placerville was established. The Meeker "massacre" of 1879 provided the government with an excuse to remove the Utes from western Colorado, and by 1882 the last of the Utes were out of the area, leaving it open to development by ranching, farming, and mining interests. The town of Norwood was started in 1885 by cattlemen. Sawpit was established by miners in 1895. By 1890 Otto Mears' Rio Grande Southern narrow gauge railroad served the area, with line from Ridgeway to Placerville. The Colorado Cooperative Company, a socialist cooperative, was formed in Denver in 1894. The company moved to western Colorado and Nucla was founded about 1905. Nucla was preceded by the towns of Cottonwood and Pinyon, both started by the Colorado Cooperative Company. Radium was mined in the San Miguel Resource Area before the turn of the century, and uranium and vanadium became important minerals in the 1930's and 40's. Rockwell's Uncompahgre Country is recommended for a detailed history of the region.

SUMMARIES OF UNPUBLISHED REPORTS

Inventory of archaeological and historical resources, Leopard Creek storage facility, southwestern Colorado. December 1976

Susan M. Applegarth, Principal Investigator
William G. Reed
Jefferey T. Wharton

This report, submitted to the Bureau of Reclamation, details an archaeological survey of areas which may be inundated by two small reservoirs and two alternate penstock alignments. 1402 acres were surveyed in the following townships: T. 44 N, R.11 W: sections 12,13,14,15,22, 23,24,25,26. T. 44 N, R. 10 W: sections 4,8. Eighteen sites were recorded, all on private land except 5SM254, which is on BLM land.

5SM241 - lithic scatter	5SM250 - lithic scatter
5SM242 - lithic scatter	5SM251 - lithic scatter
5SM243 - historic barn	5SM252 - lithic scatter
5SM244 - historic homestead	5SM253B - lithic scatter
5SM245 - lithic scatter	5SM254 - historic homestead
5SM246 - lithic scatter	5SM255 - town of Brown or Leonard
5SM247 - lithic scatter	5SM256 - aerial tram and mine
5SM248 - historic homestead	5SM257 - ore chute
5SM249 - lithic scatter	5SM258 - mine

Archaeological and cultural resource survey of the Paradox Valley unit, Montrose county, Colorado. 1976

Susan M. Applegarth
John R. Vanness

Report of a survey conducted for the Bureau of Reclamation, of a proposed well field, radium evaporation pond, and alternate route 1C of a brine pipeline. Between the three areas, seven historic sites, fifteen lithic areas and seven isolated artifacts were recorded. The areas surveyed were as follows: Well field: along the Dolores River, north and south of West Paradox Creek, T. 47 N, R. 18 W, sections 9,16 (Davis Mesa Quad.) 1,400 acres. Radium evaporation pond: beginning in the

southern portions of sections 31 and 32, T. 45 N, R. 16 W and extending south, including portions of section 16, T. 44 N, R. 16 W and portions of sections 6,7,8,10,15,16,17, T. 44 N, R. 16 W. (Gypsum Gap and Basin Quads.) 4000 acres. Brine pipeline: beginning at the northeast corner of the evaporation pond in section 32, T. 45 N, R. 16 W, going northwest to the west fork of Dry Creek in the northeast quarter of section 31, T. 45 N, R. 16 W; following the west fork of Dry Creek to section 34, T. 46 N, R. 16 W; north to south of highway 90 and then west along the highway to a terminus in the west quarter of section 16, T.47 N, R. 18 W. (Gypsum Gap, Naturita NW, and Davis Mesa Quads.) 129,000 feet, 600 acres.

SSM163 - lithic	5MN496 - lithic
SSM164 - lithic	5MN497 - lithic
SSM165 - overhang	5MN498 - overhang, petroglyphs
SSM166 - overhang	5MN499 - lithic
SSM167 - historic	5MN500 - lithic
SSM168 - historic	5MN501 - lithic
SSM169 - historic	5MN502 - rockshelter
5MN492 - lithic	5MN503 - historic grave
5MN493 - lithic	5MN504 - historic shack
5MN494 - lithic	5MN505 - historic
5MN495 - lithic	5MN506 - historic

Inventory of archaeological and historical resources of the San Miguel project, Colorado. 1976

Robert W. Biggs
Susan M. Applegarth

This is a progress report (Aug. 9 - Jan. 15) of the San Miguel River project, a survey conducted for the Bureau of Reclamation. 132 sites were recorded, 22 historic and 110 prehistoric sites. All prehistoric sites were lithic scatters except for four rockshelters: 5MN613,615,621, and 622; and one ceramic/lithic scatter: 5MN522. Sites 5SM28 and 29 and 5MN335, 337, and 338 had been previously recorded by Toll(1975).

Lithic sites

5SM 28
 29
 174-185
 206-211
 213-214
 218-226
 228
 231-237
 5MN 335A and B
 337
 338
 507
 508
 513-516
 520
 521
 523-540
 542-547
 549-555
 601-612
 616-620
 625-627
 630-633

Historic sites

5SM 171
 203-205
 212
 215-217
 227
 229
 230
 238
 239
 5MN 509
 541
 548
 614
 623-624
 628-629
 634

Inventory of archaeological and historical resources proposed brine pipeline, Paradox Valley unit project, Colorado. December 1976

Robert W. Biggs

Barry N. Hibbets

Susan M. Applegarth - Principal Investigator

This report, submitted to the Bureau of Reclamation, concerns the survey of alternate 1A of the brine pipeline, Paradox Valley unit project. The proposed route begins on the south side of highway 90, extends south out of Paradox Valley onto Monogram Mesa, and continues south into Dry Creek Basin to the termination in the proposed radium evaporation pond. The pipeline is 10.1 miles long and was surveyed for 100 feet on either side of the alignment. All of the sites recorded are on BLM land on Monogram Mesa and its southern margin with Dry Creek Basin. 5SM 170-173, 5MN510-512, all lithic areas.

Final report of inventory of Indian ruins, Dolores River area. 1972

David A. Breternitz

During the summer field seasons of 1971-1972, the University of Colorado Mesa Verde Research Center conducted a survey of a portion of the Dolores River area. Four areas were surveyed and a total of 44 sites were recorded. Only two of the areas and 32 sites are located in the San Miguel Resource Area. Campsites were distinguished from chipping sites on the basis of the presence or absence of grinding tools.

Area of Big and Little Gypsum Vallies:

Between Slickrock and Bedrock:

SMN71 - camp
SSM 1 - camp
SSM 2 - camp
SSM 3 - chipping
SSM 4 - camp
SSM 5 - chipping
SSM 6 - chipping
SSM 7 - camp
SSM 8 - chipping
SSM 9 - overhang, petroglyphs
SSM10 - camp, petroglyphs
SSM11 - chipping
SSM12 - camp
SSM13 - chipping
SSM14 - petroglyphs

SSM15 - chipping
SSM16 - rockshelter
SSM17 - chipping
SSM18 - chipping
SSM19 - chipping
SSM20 - camp
SSM21 - chipping
SSM22 - camp
SSM23 - chipping
SSM24 - overhang
SSM25 - chipping
SSM26 - chipping
SMN72 - petroglyphs
SMN73 - petroglyphs
SMN74 - chipping
SMN75 - chipping
SMN76 - isolated artifact.

Cultural resources recorded for the BLM-75 Montrose project. 1975

David A. Breternitz

Cory D. Breternitz

Field workers for the University of Colorado Mesa Verde Research Center checked 420 acres within the San Miguel Resource Area, on Beaver Mesa near Turner Creek and Goat Creek. Sites SSM51-54, all lithic areas, were recorded.

Report of archaeological reconnaissance, Bureau of Land Management lands along the San Miguel River, Montrose County, Colorado. 1973

David A. Breternitz
Cynthia Newsom
Henry W. Toll III

Report of a site survey conducted during the summer of 1973 by the University of Colorado Mesa Verde Research Center. The survey included BLM land within the Dolores River Canyon, Montrose County. Both sides of the San Miguel River were surveyed (up to 400 vertical feet above the river) in the area between the San Miguel/Dolores River confluence and an area in the NW $\frac{1}{4}$ of section 13, T. 47 N, R. 17 W. From this area the survey continued south, along the west side of the San Miguel River as far as section 10, T. 46 N, R. 16 W. A total of 94 sites were recorded; 58 chipping sites, 27 camp sites, 5 quarry sites, and 4 special sites. Sites were designated 5MN77-170. 7 isolated artifacts were recorded. Camp sites were differentiated from chipping sites by the presence of grinding tools, firepits, stone structures, or rubble. Special sites included 2 sites with sherds, a pictograph site, and a cave site with a crude masonry wall.

Archaeological inventory of the "Thomas Exchange" project. 1977

Robert T. Euler

An area of 9800 acres were surveyed for archaeological resources by the University of Colorado Mesa Verde Research Center. The survey was of 143 isolated parcels of land. Within the San Miguel Resource Area 29 sites were recorded; 2 historic and 27 prehistoric.

SSM 58-71
SSM 189-195
SMN 464-471
5DL 219

All sites are lithic areas except for 5SM67, a rock shelter, 5MN466, an historic site, and 5DL219, an historic sweat lodge.

Archaeological resources of the San Miguel River from Cottonwood Creek to Norwood Hill. Results of the second season of survey on the river. 1975

H. Wolcott Toll 111

This survey was conducted by the University of Colorado Mesa Verde Research Center during the summer of 1974, as a continuation of the 1973 survey (Breternitz, Newsom, and Toll:1973). The area surveyed is along the San Miguel River, upstream from the 1973 survey area approx. 21 kms., extending from Cottonwood Creek, southeast to the Norwood Hill bridge, a distance of approx. 22 kms. Approximately 5775 acres of land (BLM plus private holdings) were surveyed on foot. A total of 154 archaeological sites were recorded. Sites were classified by attributes which they contained, i.e., grinding stones, prepared tools, sherds, structure, etc. 29 sites recorded had grinding tools, 2 had structures, 151 had prepared tools, 5 had sherds, 3 had rock art, 10 were overhangs, and 3 had fire hearths. These sites were recorded as 5MN214-365 and 5SM28,29. It was found that site density is higher in this area than the downstream (1973) area, and that there are more sites with prepared tools and less with ground stone in this area of the river,

Completion of archaeological survey on the San Miguel River from Cottonwood Creek to Norwood Hill bridge. 1976

H. Wolcott Toll 111

This survey was a continuation of the 1974 field work (Toll:1975) along the San Miguel River, conducted for the BLM by the University of Colorado Mesa Verde Research Center. Survey was primarily done on the north to east side of the river from Norwood Hill bridge to the mouth of Horsefly Creek. 2000 acres were surveyed and 57 sites (83 areas) were recorded. All sites are prehistoric, and are numbered 5MN381-432

and 5SM30-33, 57. Of the 83 areas, 46 had prepared tools, 19 had grinding stones, 4 had indications of fire, 3 were overhangs (one with pictographs), and one had a masonry structure.

Final report of cultural resource inventories: Grand Mesa - Uncompahgre - Gunnison National Forests. 1975, 1976

Burton D. Williams

A survey of proposed timber sale areas was conducted for the United States Dept. Agriculture (Forest Service). Several small tracts of land were surveyed, both in and outside of the San Miguel Resource Area. 34 sites were recorded in the San Miguel Resource area, mostly on the rim of Naturita Canyon between Lindsey Spring and Goshorn Draw. A few sites were recorded in the interior, behind the canyon rims (on the mesa top). Sites were numbered 5SM128-161, all are lithic sites with the exception of 5SM135, a possible structure.

Other sites reported in area:

J.W. King: 5MN808 "Indian artifact cave" T. 46 N, R. 12 W, section 32

State Department of Highways:

5MN810 - rock shelter	T. 47 N, R. 19 W, nw $\frac{1}{4}$ of se $\frac{1}{4}$, sec. 18
5MN811 - lithic area	T. 47 N, R. 18 W, sw $\frac{1}{4}$ of sw $\frac{1}{4}$, sec. 20
5SM253 - lithic area	T. 45 N, R. 12 W, se $\frac{1}{4}$ of sw $\frac{1}{4}$, sec. 19
5SM286 - lithic area	T. 43 N, R. 17 W, sw $\frac{1}{4}$ of ne $\frac{1}{4}$, sec. 2

Doug Scott, BLM Montrose district archaeologist:

5MN804 - lithic area	T. 47 N, R. 15 W, sw $\frac{1}{4}$ of se $\frac{1}{4}$, sec. 34
5MN805 - lithics & sherds	T. 47 N, R. 16 W, center section 3
5MN808 - lithic area	T. 47 N, R. 16 W, sw $\frac{1}{4}$ of nw $\frac{1}{4}$, sec. 24
5MN812 - quarry area	T. 48 N, R. 16 W, nw $\frac{1}{4}$ of se $\frac{1}{4}$, sec. 16
5MN813 - lithics, wickiup	T. 48 N, R. 16 W, nw $\frac{1}{4}$ of se $\frac{1}{4}$, sec. 16
5MN814 - lithic area	T. 48 N, R. 16 W, nw $\frac{1}{4}$ of ne $\frac{1}{4}$, sec. 29
5MN815 - lithic area	T. 46 N, R. 16 W, nw $\frac{1}{4}$ of se $\frac{1}{4}$, sec. 23
5MN817 - lithic area	T. 46 N, R. 15 W, ne & sw $\frac{1}{4}$ of se $\frac{1}{4}$, section 21

SSM186 - petroglyphs T. 43 N, R. 17 W, sw $\frac{1}{4}$ of se $\frac{1}{4}$, sec. 2
SSM187 - lithic area T. 42 N, R. 18 W, nw $\frac{1}{4}$ of ne $\frac{1}{4}$, sec. 5
SSM188 - lithic area T. 42 N, R. 18 W, ne $\frac{1}{4}$ of ne $\frac{1}{4}$, sec. 5
SSM189 - lithic area T. 47 N, R. 16 W, se $\frac{1}{4}$ of nw $\frac{1}{4}$, sec. 24
SSM190 - lithic area T. 43 N, R. 19 W, sw $\frac{1}{4}$ of ne $\frac{1}{4}$, sec. 5
SSM284 - lithic area T. 44 N, R. 18 W, ne $\frac{1}{4}$ of se $\frac{1}{4}$, sec. 21
SSM285 - lithic area T. 44 N, R. 18 W, se $\frac{1}{4}$ of se $\frac{1}{4}$, sec. 21

PART II

FIELD SAMPLING INVENTORY

RESEARCH DESIGN

The San Miguel Resource Area contains approximately 900,000 acres of public lands administered by the Bureau of Land Management; 4000 acres comprising a 0.44% sample were surveyed for prehistoric and historic cultural remains during the present project.

Procedures - The contract called for a field inventory of a small portion of the public land within the San Miguel Resource Area. The field inventory was to be a stratified random predictive sample, with the following physiographic divisions and restrictions specified.

1. Canyon Rim - Especially the Tabeguache rim area
2. Mesa Top, Terrace, and Bench - Particularly away from the San Miguel River itself
3. Talus
4. Outlying Areas - Away from the river and its main tributaries
5. Valley Bottom - As necessary

Definitions of these landforms follow those in the Uncompahgre E.I.S. (Martin 1977:9-12).

Canyon rim is the strip of level land adjacent to the rim of a canyon and extending approximately 150m away from the rim.

Mesa Top, Terrace, and Bench - Mesa Top consists of all level or nearly level land on the top of the mesa, excluding the 150m wide canyon rim. Terrace and Bench refer to the flat areas on the talus slopes which are relatively narrow and

terminate in steep banks.

Talus - consists of areas of land with a significant slope.

Outlying Areas - The low, open areas of Dry Creek Basin, Disappointment Valley, Big and Little Gypsum Valleys, and Paradox Valley which are not adjacent to the rivers and creeks are here termed outlying. It should be noted that Gypsum Valley and Paradox Valley are not river valleys, but collapsed anticlinal formations.

Valley Bottom is the relatively level land immediately adjacent to the floodplain of a canyon or valley.

The 4000 acre sample was divided into quarter section blocks, i.e., 25 160-acre sampling units were to be field inventoried. The resource area includes 70 townships which contain some amount of BLM land, in the form of parcels of varied size interspersed with private holdings. Pragmatic considerations of time and logistics made it advantageous to nest the sample in order to cluster sample units. Townships were numbered sequentially and 20 were chosen, using a published table of random numbers. Within these townships all sections which contained BLM land were numbered and 22 sections were chosen, again using a random number table. From these sections the 160 acre sampling units were selected (3 quarter sections were held for the Tabeguache rim.).

It was necessary to choose sampling units which could be hiked into and surveyed in one day, and desirable to choose units which were a continuous tract of a specific landform. Inaccessable and inappropriate sections were rejected and new sections chosen. It was sometimes necessary to survey across section lines in order to complete a sampling unit of one landform. It was also occasionally necessary to survey a sampling unit which consisted of more than one physiographic division -

for example, a talus slope which contained terraces and benches, or a mesa top, using a canyon rim as a boundary. When this occurred, the amount of each landform surveyed was calculated and sites were listed under the appropriate landform.

FIELD METHODS

Once a sampling unit was selected, it was surveyed on foot by walking adjacent linear traverses across the unit until the unit was thoroughly covered. Surveyors were generally spaced approximately 30 meters apart, although this was narrowed, and occasionally widened, as dictated by the frequency and nature of the cultural material encountered, denseness of vegetation, and topography.

Upon location of a site (arbitrarily defined as ten or more artifacts in a contiguous area), a site report was filled out and the site was photographed and sketched. The site was given a Smithsonian Institution number. A grab sample of the material present was collected. Although this introduces a bias into the collection, efforts were made to collect a representative sample of the range of material on the site, in the approximate proportions in which it occurred. All prepared tools and utilized flakes were collected. Sites with small quantities of material were totally collected; this does not mean that the site no longer exists, only that all surface material visible at that time was collected. Eyeball estimates of the percentage of material present which was collected are included both in the site reports and in the collection inventories. Amount collected, as compared to estimates of percent collected, will give an idea of the density of material on a site.

Historic remains were not recorded unless they appeared to be at least 50 years old. The San Miguel Resource Area has seen extensive mining activity, particularly uranium mining, which was not recorded during this project. Several historical structures were located on prehistoric sites, and recorded as components of those sites.

Isolated artifacts are tools which were not associated with sites. Small numbers of flakes which were not enough to call a site were treated as isolated artifacts.

SITE REPORT FORMAT

Sites were recorded using the BLM Antiquities Site Inventory Form 6230-2. A few of the items on the form may not be self-explanatory. These are discussed below:

- Item 1 - Left blank for the use of the BLM numbering system, or a permanent state site number.
- Item 2 - Labeling of site has remained in the descriptive realm as opposed to categorizing sites by function. Attributes of sites are described, i.e., lithic area, lithic area with sherds, overhang, etc.
- Item 7 - A site number has been assigned using the Smithsonian Institution Trinomial System.
- Item 8 - Left blank; cultural affiliation and dates of use are indeterminable at this time.
- Item 9 - Includes a brief description of the site and its setting.
All distances are estimates, sometimes taken from the map.
Vertical distances (elevations) are given in feet, other

distances are in meters.

Included is the following information:

Exposure: Direction(s) to which the site is open to the elements.

Water: Direction and distance (as the crow flies) to the nearest known source of water.

Drainage: Direction(s) in which the site drains.

Vegetation: Listed here is the vegetation which is found on the site. If there is a (marked) difference between that on the site and surrounding the site, it is so noted. Botanical names are as follows:

Banana Yucca (Yucca baccata)
 Bitterbrush (Purshia tridentata)
 Gambel oak/scrub oak (Quercus gambelii)
 Grasses (Gramineae family)
 Hedgehog cacti (Echinocereus coccineus)
 Mormon tea (Ephedra species)
 Mountain mahogany (Cercocarpus species)
 Narrow-leaf yucca (Yucca species)
 Pinyon Pine (Pinus edulis)
 Prickly pear (Opuntia species)
 Rabbit brush (Chrysothamnus naueosus)
 Russian thistle (Salsola species)
 Sagebrush (Artemisia tridentata and Artemisia species)
 Saltbush (Atriplex species)
 Service berry (Amelanchier species)
 Utah juniper (Juniperus osteosperma)
 Snakeweed (Gutierrezia sarothrae)

The term "riparian" indicates vegetation which grows along the banks of a creek or river. Riparian growth that we observed includes:

Cottonwoods (Populus species)
 Tamarisk (Tamarix gallica)
 Willows (Salix species)
 Skunk bush (Rhus trilobata)

Soil: This remains descriptive in nature; the differences between loess, alluvial, and colluvial deposits are difficult to distinguish by non-experts.

Slope: An eyeball estimate. The slope recorded refers to the major portion of the site.

Flat = 0-4 degrees
 Gentle = 5-10 degrees
 Moderate = 10-25 degrees
 Steep = Greater than 25 degrees

Collections: A rough estimate of the percent of visible material which was collected.

Item 15 - On the site sketches, the arrow indicates true north.

Item 17 - Even though this section was left blank, all sites deserve further investigation if threatened.

INVENTORY OF SITES AND AREAS SURVEYED

The following is a section-by-section listing of areas surveyed. In order to facilitate location of surveyed areas, a key map is provided (Figure 1). Numbers 1-19 on the map show the general location of these areas. Most areas consist of a single 160 acre sampling unit, but some sampling units which were located in the same general area were combined, and share a number.

A more detailed map of each area is included as Appendix A. It is hoped that with the use of this inventory list in combination with these U.S.G.S. quad maps, future investigators will be able to easily determine what has previously been surveyed.

On the inventory list, each numbered area is treated independently. The first line states the area number (as shown on the key map) and the U.S.G.S. quad map reference. The area is then broken down into Townships, sections, quarter sections, and quarter-quarter sections. Each quarter-quarter section listed was at least partially surveyed. An asterik (*)

indicates that the entire quarter-quarter section was covered. Quarter-quarter sections in which sites and isolated artifacts were found have the site numbers and I.A. numbers listed immediately to their right. Obviously, some sites are not actually located in one quarter-quarter due to their size or being situated on section boundaries. In these cases, the site was listed next to the quarter-quarter section in which the largest portion was located.

Sites 5SM94, 5MN813 (Tabeguache Cave 2), and I.A. 51 are not included in this inventory because they are not located in the 4000 acre sample.

After the field work was completed, it was discovered that a portion of Area 10 (Dry Creek valley bottom) had previously been surveyed (Applegarth and Vanness 1976). The two historic structures described in this report as 5MN790 and 5MN791 were recorded by Applegarth and Vanness as 5MN505 and 5MN506.

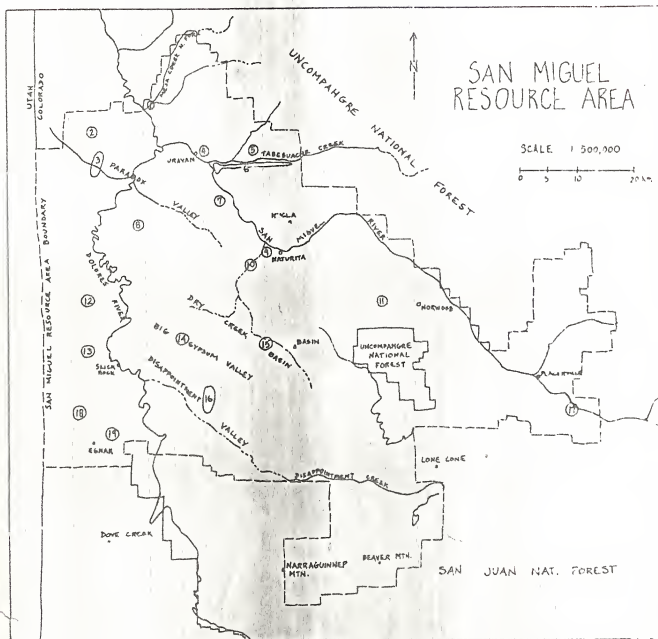


FIGURE 1

Map of San Miguel Resource Area. Numbers 1-19 indicate locations of units surveyed.

ARTIFACTS

The amount of material collected varied according to the size and density of each site. Included in the artifact inventory list after each site is an estimate of the percentage of visible cultural material collected.

A significant amount of flakes collected were prepared tools or had intentional retouch along at least one edge. On the artifact inventory a distinction has been made between "prepared tools" and "utilized flakes". A prepared tool is a flake which has been intentionally modified over a major portion of its surface to facilitate utilization for one or more particular purposes. Prepared tools are bifacially flaked, except in the case of some scrapers which exhibit a minimum amount of modification. Except when otherwise indicated, on the inventory list, tools are bifacially thinned over the entire surface.

Many of the utilized flakes have intentional retouch, but only along one or two edges. A more detailed description of these utilized flakes is on file at the University of Colorado, Boulder.

Tools from each site were analyzed as to morphology and technique of manufacture. A cursory examination for wear was made, but by no means was an extensive functional or typological analysis completed.

To maintain consistency with other work carried out by the Mesa Verde Research Center, material definitions are as follows:

Cryptocrystalline is a form of quartz in which the crystalline structure is not visible. Included in the cryptocrystallines are cherts and chalcedonies. Cherts are opaque, smooth textured stone, of a variety of colors. Chalcedonies are similar to cherts, waxy in texture, translucent,

often white or light colors. Quartzite refers to a material in which a crystalline type structure is visible, with a large range of grain sizes and colors. Fine quartzite refers to a relatively smaller grain size. Siltstone is a sedimentary stone, fine-grained, sometimes with sedimentary banding. Silicified siltstone is often difficult to distinguish from cherts.

Prepared tools are all measured in centimeters. All measurements are recorded in this order: Length, width, thickness. If the percussion axis is determinable, that is considered the length. Otherwise the length is measured at the maximum length along the longitudinal axis. On a projectile point, the measurement from tip to base is considered the length. Width is measured at the widest point perpendicular to the length, and thickness is measured at the tool's thickest point.

Descriptive terminology follows Crabtree (1972). An attempt was made to define scrapers and knives on the basis of function rather than appearance. Scrapers may have been unifacially or bifacially flaked, but wear is unifacial. Knives, on the other hand, are bifacially utilized. Tools which have the general appearance of knives or scrapers, but lack obvious wear, are categorized as bifaces.

Abbreviation Key

CE - Cryptocrystalline
 CT - Chert
 CY - Chalcedony
 FE - Felsite Porphyry
 FQE - Fine Quartzite
 IS - Igneous
 ON - Obsidian
 QE - Quartzite
 QE SS - Quartz Sandstone
 SE - Siltstone
 SS - Sandstone

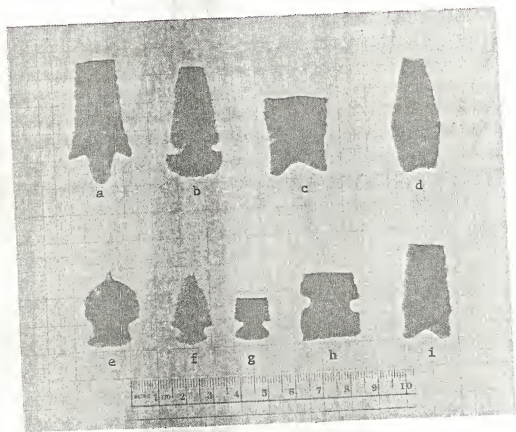


Figure 2. Projectile points: a, I.A. 26; b, 5MN815; c, I.A. 46; d, 5MN774; e, 5MN776; f, 5MN814; g, 5SM81; h, 5MN796; i, 5MN830A.

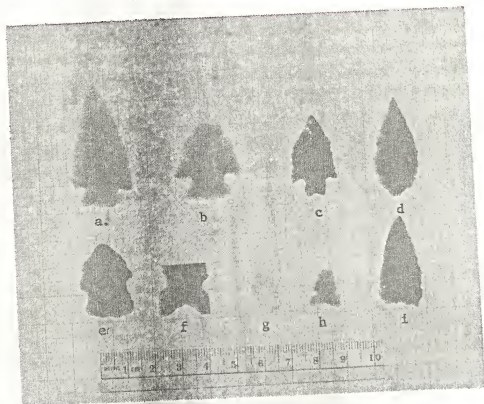


Figure 3. Projectile points: a, 5MN773; b, 5MN818B; c, 5MN830A; d, 5MN772; e, 5MN798; f, 5MN783; g, I.A. 21, h, 5MN824; i, 5MN800.



Figure 4. Bifaces: a, 5MN783; b, 5MN835A; c, 5MN810; d, I.A. 38; e, 5SM92; f, 5MN808; g, 5MN808; h, 5SM78.



Figure 5. Bifaces and knives: a, 5MN821; b, 5MN781; c, 5SM78; d, 5MN823; e, 5MN835A; f, 5MN773; g, 5MN786.

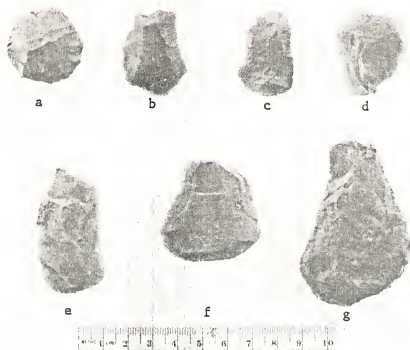


Figure 6. Scrapers: a, I.A. 34; b, 5MN770; c, 5MN780;
d, 5MN808; e, 5MN789; f, 5MN789; g, 5SM87

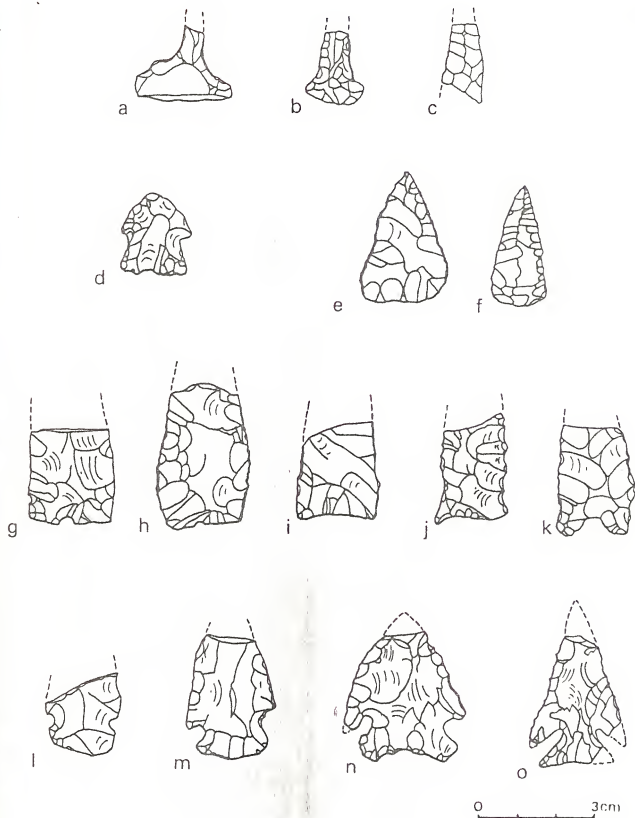


Figure 7. Drills(?): a, 5MN818A; b, 5MN777; c, 5MN 784. Projectile points and bifaces: d, 5MN808; e, 5MN 799; f, 5SM94; g, 5MN775; h, I.A. 49; i, 5MN785; j, 5SM89; k, 5SM94; l, 5MN783; m, 5MN783; n, 5MN819; o, 5MN807.

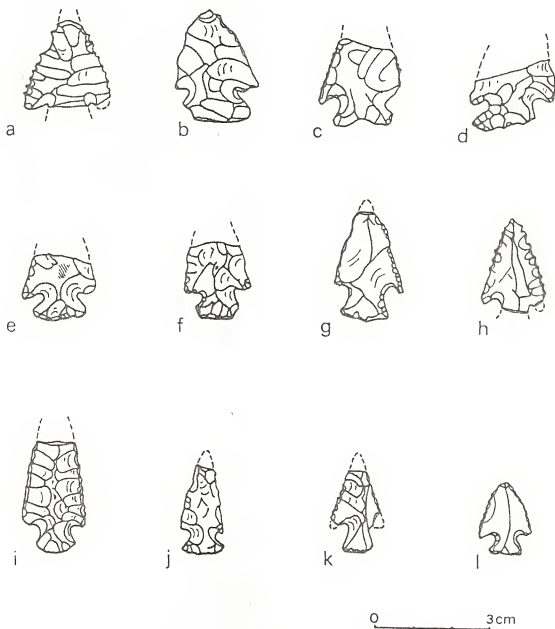


Figure 8. Projectile points: a, I.A. 48; b, 5MN783; c, 5SM94; d, 5MN774; e, 5MN783; f, I.A.30; g, 5SM94; h, 5SM94; i, 5SM75; j, 5MN775; k, 5SM81; l, I.A. 4.

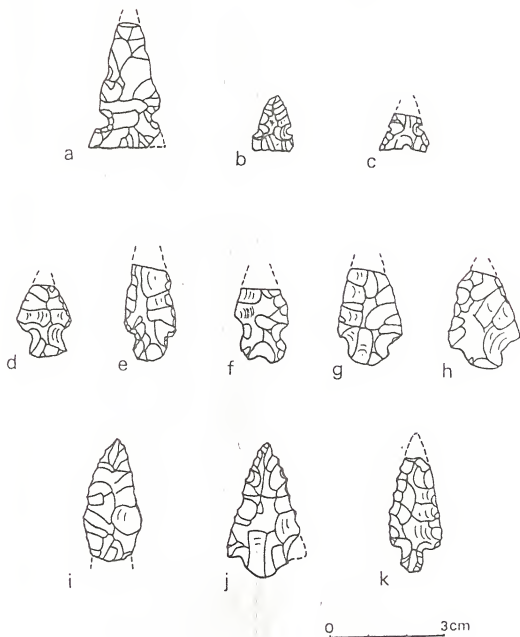


Figure 9. Projectile points: a, 5SM74; b, 5MN832; c, 5MN823; d, I.A. 36; e, 5SM94; f, 5MN773; g, 5SM94; h, 5SM94; i, 5MN794; j, I.A. 17; k, I.A. 28.

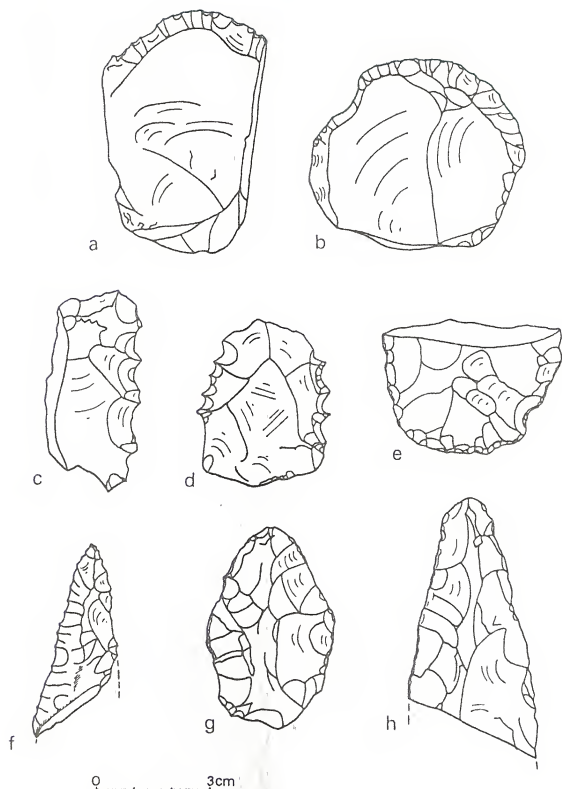


Figure 10. Scrapers and bifaces: a, 5MN783; b, 5MN784; c, 5MN778; d, 5MN788; e, 5SM94; f, 5MN803; g, 5SM94; h, 5SM94.

SITES AND SITE ATTRIBUTES

Table 1 is a list of 91 sites, including 99 areas, listing the site number, type of site, and the physiographic division within which it is located. Sites marked with an asterisk (*) are not included in the sample data. A judgement has been made on the level of significance of each site, based on the nature, density, and condition of the surface remains; 4 sites are rated as nationally significant, 12 sites are of state significance, and 75 are locally significant.

There is a lack of satisfactory diagnostic indicators in the surface remains of the sites, leading, as Toll (1975:19) has pointed out, to a difficulty in assigning functional categories or cultural affiliations to the sites. For this reason site labels are descriptive, incorporating various attributes of the site. (See Table 1)

Prepared tools: Of the 99 areas, only 15 are without prepared tools or tool fragments. The other areas yielded various combinations of projectile points, knives, scrapers, bifaces, and drills. Reference to the artifact inventory will show what tools were present at each site.

Although the activities of amateur pointhunters are evident at many sites, the quantity of tools recovered indicates that there are sites which have not been thoroughly collected, and a few which have not been vandalized at all.

Projectile points collected exhibit a wide variety of morphological types and sizes, including stemmed and unstemmed, corner-notched, side-notched, and unnotched. Surveys and excavations within the San Miguel Resource Area have also reported this variety of shapes (Toll 1977; Hurst 1945b; Williams 1976; Vondracek - personal communication), as have investigations of the Uncompahgre Plateau to the north (Wormington

Table 1

Site Types and Significance

MONTROSE COUNTY (5MN)	
770	Lithic Area; Canyon Rim; Local Significance
771	Lithic Area; Canyon Rim; Local Significance
772	Lithic Area w/Ground Stone; Mesa Top/Terrace/Bench; Local Sig.
773	Lithic Area w/Ground Stone; Mesa Top/Terrace/Bench; Local Sig.
774	Lithic Area; Outlying Area; National Significance
775A	Lithic Area; Outlying Area; Local Significance
B	Lithic Area; Outlying Area; Local Significance
776	Lithic Area w/Ground Stone and Sherds; Mesa Top/Terrace/Bench; National Significance
777	Lithic Area w/Sherds; Outlying Area; National Significance
778	Lithic Area; Outlying Area; Local Significance
779	Lithic Source Area; Talus; State Significance
780A	Lithic Area; Canyon Rim; Local Significance
B	Dry-Laid Wall; Canyon Rim; Local Significance
781	Lithic Area w/Ground Stone; Canyon Rim; Local Significance
782	Lithic Area; Canyon Rim; Local Significance
783	Lithic Area w/Ground Stone; Canyon Rim; Local Significance
784	Lithic Area; Canyon Rim; Local Significance
785	Lithic Area; Canyon Rim; Local Significance
786	Lithic Area; Canyon Rim; Local Significance
787	Lithic Area; Canyon Rim; Local Significance
788	Lithic Area w/Ground Stone; Valley Bottom; Local Significance
789	Lithic Area; Valley Bottom; Local Significance
790	Historic Structure; Valley Bottom; Local Significance
791	Historic Structure; Valley Bottom; Local Significance
792	Lithic Area; Valley Bottom; Local Significance
793	Lithic Area; Valley Bottom; Local Significance
794	Lithic Area; Mesa Top/Terrace/Bench; Local Significance
795A	Lithic Area; Mesa Top/Terrace/Bench; Local Significance
B	Lithic Area; Mesa Top/Terrace/Bench; Local Significance
796A	Lithic Area w/Ground Stone; Canyon Rim; State Significance
B	Lithic Area; Canyon Rim; Local Significance

Table 1 (Continued)
Site Types and Significance

MONTROSE COUNTY, Continued (5MN)	
797	Lithic Area; Canyon Rim; Local Significance
798	Lithic Area; Canyon Rim; Local Significance
799	Lithic Area; Canyon Rim; Local Significance
800	Overhang w/Lithics and Ground Stone; Canyon Rim; State Significance
801	Lithic Area w/Ground Stone; Canyon Rim; Local Significance
802	Lithic Area; Canyon Rim; Local Significance
803	Lithic Area; Canyon Rim; Local Significance
804	Lithic Area; Talus; Local Significance
805	Lithic Area; Talus; Local Significance
806	Lithic Area; Talus; Local Significance
807	Lithic Area; Talus; Local Significance
808	Lithic Area w/Ground Stone; Valley Bottom; State Significance
809	Lithic Area; Valley Bottom; Local Significance
810	Lithic Area; Talus; Local Significance
811	Lithic Area; Talus; Local Significance
812	Lithic Area; Valley Bottom; Local Significance
*813	Overhang (Tabeguach Cave 2); Talus; National Significance
814	Lithic Area; Canyon Rim; Local Significance
815	Lithic Area; Canyon Rim; Local Significance
816	Lithic Area; Canyon Rim; Local Significance
817	Lithic Area w/Ground Stone; Canyon Rim; Local Significance
818A	Lithic Area; Canyon Rim; Local Significance
B	Lithic Area; Canyon Rim; Local Significance
819	Lithic Area; Canyon Rim; Local Significance
821	Lithic Area; Canyon Rim; Local Significance
822	Lithic Area; Canyon Rim; Local Significance
823	Lithic Area; Canyon Rim; State Significance
824	Lithic Area; Canyon Rim; Local Significance
825	Lithic Area; Canyon Rim; Local Significance
826	Lithic Area; Canyon Rim; Local Significance
827	Lithic Area; Canyon Rim; Local Significance

Table 1 (Continued)
Site Types and Significance

MONTROSE COUNTY, Continued (5MN)	
828	Lithic Area w/Ground Stone; Canyon Rim; State Significance
829	Lithic Area; Canyon Rim; Local Significance
830A	Lithic Area w/Ground Stone; Mesa Top/Terrace/Bench; State Sig.
B	Lithic Area; Mesa Top/Terrace/Bench; Local Significance
831	Lithic Area; Mesa Top/Terrace/Bench; Local Significance
832	Lithic Area; Mesa Top/Terrace/Bench; Local Significance
833	Lithic Area; Valley Bottom; Local Significance
834	Lithic Area w/Ground Stone; Valley Bottom; Local Significance
835A	Lithic Area w/Ground Stone; Valley Bottom; State Significance
B	Lithic Area; Valley Bottom; Local Significance
836	Lithic Area; Valley Bottom; Local Significance
837	Lithic Area w/Ground Stone; Valley Bottom; Local Significance
SAN MIGUEL COUNTY (5SM)	
72	Lithic Area; Canyon Rim; Local Significance
73	Lithic Area; Canyon Rim; Local Significance
74	Lithic Area; Mesa Top/Terrace/Bench; Local Significance
75	Lithic Area; Mesa Top/Terrace/Bench; Local Significance
76	Lithic Area; Mesa Top/Terrace/Bench; Local Significance
77	Lithic Area; Canyon Rim; Local Significance
78	Lithic Area; Canyon Rim; State Significance
79	Lithic Area; Canyon Rim; Local Significance
80	Lithic Area; Canyon Rim; Local Significance
81	Lithic Area; Canyon Rim; Local Significance
82	Lithic Area; Canyon Rim; Local Significance
83	Lithic Area; Canyon Rim; Local Significance
84	Lithic Area; Canyon Rim; Local Significance
85	Lithic Area; Canyon Rim; Local Significance
86	Lithic Area; Canyon Rim; Local Significance
87	Lithic Source Area; Mesa Top/Terrace/Bench; State Significance
88A	Lithic Area; Mesa Top/Terrace/Bench; Local Significance

Table 1 (Continued)
Site Types and Significance

SAN MIGUEL COUNTY (5SM)	
88B	Lithic Area; Mesa Top/Terrace/Bench; Local Significance
89	Lithic Area; Outlying Area; Local Significance
90	Lithic Area w/Sherds; Canyon Rim; Local Significance
91	Lithic Area; Canyon Rim; Local Significance
92	Lithic Area; Canyon Rim; Local Significance
93	Lithic Area; Canyon Rim; Local Significance
*94	Lithic Area; Canyon Rim; State Significance

and Lister 1956; Buckles 1971; Martin 1977) and a survey of the La Sal Mountains to the west (Hunt 1953).

A large basal fragment of a Paleo-Indian point was recovered from 5MN774 in the West Paradox Valley (Fig. 2,d). The point has been identified as being an Agate Basin point (J.B. Wheat, personal communication), which dates from 9000-8000 B.C. The point has been reworked on the sides and its presence on this site probably represents reutilization at a time later than its original manufacture.

Three indented base points of a general Pinto-Gypsum style were recovered, dated ca.3000 B.C. to A.D. One (Fig. 7,k) was on 5SM94, a large site on the rim of Naturita Canyon, which also had several corner-notched points. Isolated artifact 46 (Fig. 2,c), found on a bench near Mesa Creek, is an indented basal fragment with diagonal thinning scars and basal grinding. 5MN830A, a small, sparse, scatter located adjacent to a drainage on the top of Spring Creek Mesa yielded an indented base point (Fig. 2,i) as well as a complete stemmed-indented base or "Duncan" point (Fig. 3,c), dated at 2500-500 B.C.

5MN783, on the rim of Dry Creek Canyon, contained the base of a "rabbit-eared" point, a point with an indented base, straight sides, and side-notches. This is similar to "Scoggin" points from the plains. (Fig. 3,f).

The side-notched and corner-notched points (Fig. 2,b,f-h; Fig. 3, a-b,e,g-h; Fig. 8; Fig. 9) represent Middle to Late Archaic, apparently the time of heaviest occupation and utilization of the area. Triangular unnotched points have been labelled projectile point blanks or preforms; however, at least one (Fig. 3,i) appears to be a finished tool.

Ground stone: Ground stone, in the form of hand milling stones,

was found on 16 site. The presence of ground stone on a site is generally (and probably correctly) used as an indication of a campsite; however, it may simply indicate an area where plant resources were initially processed.

In the artifact inventory a distinction has been made between grinding stones and manos. Grinding stones are small, usually unshaped, one-handed cobbles, and are the type commonly found in the area. The term mano is used here in reference to larger cobbles, often modified in shape, and used in reciprocal motion in conjunction with metates. These are similar in form to manos used by the Anasazi, common in the area south of the San Miguel Resource Area. The distinction is thought to represent hand stones used with wild plant material versus those used for processing cultivated material, i.e., corn. Sites 5MN773 and 776, both located in the Paradox Valley, contained manos. 5MN776 yielded one fragment and three complete manos. In association with each complete mano was a small, flat river cobble, the only river cobbles on the site. Each of the three river cobbles had wear on at least one face - striations, polish, or rubbing wear. The purpose of these cobbles and the reasons for their association with manos remains unknown. The following sites had grinding stones:

5MN772	5MN808
781	817
783	828
788	830A
796	834
800	835A
801	837

Three grinding stones were found which were not associated with sites, isolated artifacts 20, 31, and 32.

Ceramics: Sites with ceramics are rare in the San Miguel Resource

Area, and those sites with sherds apparently only contain minimal amounts.

Site 5SM92, located on Horse Range Mesa, contained 37 sherds. The sherds, from an unclassifiable gray ware jar, were found in one small area within a general lithic scatter. Three of the sherds are rim fragments, with an everted rim similar to late Pueblo II styles.

Site 5MN776, in West Paradox Valley, had one unclassifiable gray ware jar body sherd and one neckbanded gray ware jar neck sherd resembling Mancos Gray. Site 5MN777, also in the West Paradox Valley and near 5MN776, had five sherds representing three vessels. One unclassifiable white ware bowl body sherd was recovered, as were three unclassifiable white ware jar body sherds. Additionally, one Black-on-white bowl body sherd was found, with mineral paint, and resembling Cortez Black-on-white. The temper in the sherds from West Paradox Valley is similar to sand from West Paradox Creek, suggesting that these were locally made Anasazi style ceramics. Sites 5MN776 and 777 may represent special activity or resource gathering areas used by the people inhabiting the permanent masonry structures farther west in Paradox Valley.

Obsidian: Flakes and tools of obsidian are also quite rare in this region. Surveys of surrounding areas of western Colorado also report rare occurrences of obsidian, with the exception of some sites in the Gunnison Gorge area, which contained quantities of obsidian debitage (Roebuck 1977).

Obsidian was found at seven sites during this project, always being a single flake or tool. Sites 5SM72, 5SM78, and 5MN781 had nonutilized waste flakes. Sites 5SM79 and 5MN795A had utilized flakes,

with attrition-type wear. 5MN776 contained a drill with rotational wear. The drill is side-notched with an expanding base, and has been reworked, probably from a projectile point (Fig. 2,e). 5SM74 yielded a reworked projectile point fragment; one notch present, the tip and a portion of the stem are missing. The base is worn and rounded with some polish.

The potential for tracing the source area(s) for these items exists. Using obsidian for dating is also a possibility, if and when hydration techniques advance to a point where surface material can be used.

Fire: Indications of utilization of fire include: hearths - stone alignments enclosing ash or charcoal laden soil; or, fire blackening on the ceilings of overhangs. The occurrence of a slight charcoal stain or scattered burned rocks on the surface of a site was not categorized as being cultural due to the prevalence of lightning originated fires in the area. Three sites, 5MN796A, 5MN803, and 5MN808 had fire hearths. Site 5MN800 is an overhang with a smoke blackened ceiling. There is also a hearth in front of the overhang, but this may be recent. The sites are on the southern rim of Tabeguache Canyon, with the exception of 5MN808 which is adjacent to Shavano Creek.

Structures and overhangs: No prehistoric habitation structures of the type reported by the Woodbury's (1932) and Hurst (1946, 1948) were located during this survey.

5MN780B is a dry laid wall consisting of two courses of sandstone blocks built on a bedrock boulder. There are no artifacts near the wall; however, 5MN780A, a lithic area, is directly upslope from the wall. The site is near and overlooking a blue-line drainage which flows into

Dry Creek. The wall may have served as a game blind, but its exact function and age are undeterminable.

Two overhangs (rock shelters) were located. 5MN800 is a smoke blackened overhang on the rim of Tabeguache Canyon. Several grinding stones and numerous flakes were in the overhang and in front of it. The overhang has been potted, but the presence of a complete unnotched triangular projectile point on the surface indicates that it has not been thoroughly vandalized. 5MN835, adjacent to Mesa Creek, consists of an overhang with a few waste flakes within and around it. The bench in front of the overhang contains numerous lithics and an alignment of upright sandstone slabs.

The remnants of a pole or brush fence are located within site 5MN818. The fence is historic, probably used by sheep-herders or cattlemen, possibly by Utes. It consists of cut poles set between trees, and may be similar to a brush structure reported by Martin (1977:82) north of the Uncompahgre Plateau.

Sites 5MN790 and 791 (5MN505 and 506 in Applegarth and Vanness 1976) near Dry Creek, are historical structures. They consist of one room huts made of sandstone blocks and mud mortar, with manufactured wood and modern nails used on the roofs. The huts are the remnants of either mining or herding activity.

Two sites, 5SM80 and 81, both lithic areas on the rim of Burn Canyon (a tributary to Naturita Creek) had historical components of small pens. The pens are constructed of logs or poles wired together at the corners. Both are built against trees, and have wire gates. These probably represent stock pens or corrals, although they are only large enough for one horse or a few smaller animals. They may be hunter's camps.

DISTURBANCE

Unfortunately (archaeologically speaking), Western Colorado has seen much activity since the time of aboriginal occupation. Most of the areas surveyed during this project have been disturbed to some extent by recent activity. In many cases this activity has had the effect of destroying the integrity of the cultural resources. The evidence of disturbance ranges from the presence of recent trash on sites to mining activity and chaining of pinyon-juniper forests. The most pervasive type of disturbance, and most difficult to control, is the activities of amateur artifact hunters who vandalize sites for the benefit of their personal collections. Open lithic areas are exposed to surface collection, and overhangs, particularly vulnerable to vandalism, are subjected to extensive digging.

Uranium and vanadium mining pursuits have been detrimental to the cultural resources of the region. Mining also has the effect of opening access to new areas through road construction, and bringing people into the area, exacerbating problems with vandalism. Range management policies practiced in the past have often been carried out at the expense of cultural resources. Contour furrowing, reseeding, and chaining of vegetation produce disrupted, disguised, and destroyed sites. In some areas entire mesa tops have been chained and the uprooted trees have not been cleared away. Grazing also has deleterious effects on sites, both through the trampling action of the animals and the related "improvements" such as construction of roads, fences, stock ponds and feeding tanks.

All areas have been and continue to be subjected to amateur collecting. The other types of disturbance seen in the areas surveyed have been noted

below. The numbers and order given correspond to the "Inventory of Areas Surveyed" and Figure 1.

1. Mesa Creek - grazing
2. Carpenter Flats - grazing
3. West Paradox Valley - modern Anglo trash, cultivation
4. Spring Creek Mesa - Highly disturbed by mining (roads, test pits), grazing, contour furrowing over part of the area.
5. Shavano Creek Talus - mining, road construction, grazing
6. Rim of Tañeguache Creek and San Miguel River - partly chained, not cleared, some mining and road construction
7. Talus west of San Miguel River, south of Uravan - mining and grazing
8. Skein Mesa - grazing, some mining
9. Rim of Dry Creek Canyon - extensive recent mining claims and new roads bulldozed in the area
10. Dry Creek Valley Bottom - some grazing, historic Anglo trash
11. Rim of Burn Canyon and Naturita Canyon - grazing, recent trash
12. Island Mesa - mining construction, road construction
13. Horse Range Mesa - chained, not cleared, mining and grazing activity
14. Big Gypsum Valley - pipeline construction
15. Dry Creek Basin - overgrazing, ditch construction, stock or crop watering
16. Disappointment Valley - contour furrowing
17. Confluence of Big Bear Creek and San Miguel River - historically settled mining town (Vanadium)
18. Egnar, east of Bishop Canyon - partly chained, not cleared, grazing, road construction
19. Egnar, southeast of Bush Canyon - grazing, vegetation disturbance, reseeding, pipeline and road construction

It was recognized early in the project that a 0.44% sample would not provide an adequate amount of information from which to make an accurate predictive statement. The survey was conducted in a fashion designed to establish a data base which can be augmented by further stages of field inventory done in a comparable manner (i.e., stratified random sample). Until sampling of the area reaches a sufficient amount - in this case probably a 10% sample or more - estimates of site number, density, and diversity cannot be confidently expressed as a quantitative mathematical measure.

Table 2 shows the amount of each physiographic division surveyed, the number of sites and isolated artifacts located in each physiographic division, and the number of sites per quarter-section for each landform. This last column, sites/quarter section, contains two numbers. The first number was calculated by dividing the total number of sites by the number of quarter sections surveyed for each landform. The number in parentheses was calculated by figuring the average number of sites for each individual area surveyed, and then averaging those values. The number in parentheses has been rounded off and used in Table 3.

In order to get an improved estimate of the expected number of sites per quarter-section and to better test the reliability of that estimate, Student's "t" test was used to analyze the data. The number of sites per quarter-section was calculated for each area and physiographic type. The average or expected value for each physiographic region was calculated as well as 90% confidence intervals, intervals that have a 90% chance of having the actual number of sites per quarter-section.

Table 2

Surveyed quarter-sections, Number of Sites, and Isolated Artifacts

Landform	Surveyed ¼ sections	Sites	Isolated Artifacts	Sites per ¼ section
Canyon Rim	7.2	50	27	6.94 (5.95)
Mesa Top/Terrace/Bench	5.15	13	8	2.52 (5.70)
Talus	4.95	7	5	1.41 (2.89)
Outlying Area	5.4	5	5	0.93 (0.85)
Valley Bottom	<u>2.3</u>	<u>14</u>	<u>5</u>	6.09 (7.00)
Total	25.00	89	50	

Table 3

Samples, Sites per quarter-section and Confidence Interval

Landform	# of Samples	# Sites/¼ section	Confidence Interval
Canyon Rim	8	6.0	(3.2, 8.7)
Mesa Top/Terrace/ Bench	9	5.7	(0, 11.4)
Talus	5	2.9	(0, 6.4)
Outlying Area	4	.9	(0, 2.4)
Valley Bottom	3	7.0	(2.5, 11.5)

It should be emphasized that the ranges (confidence intervals) will change as the amount of data is increased. The information is included not as a prediction but for comparative value for future research in the

area.

The figures also serve to point out problems in the sampling scheme. Reference to the sites per quarter-section column in table 2 shows that the estimated number of sites per quarter-section for mesa top/terrace/bench and talus are more than twice as high when the average of each area surveyed is figured than when the total number of sites per landform is averaged. This shows that some areas had a disproportionately larger number of sites per area, i.e., areas range from being almost devoid of archaeological remains to showing extensive prehistoric utilization. Clearly, factors other than landform are involved in the distribution of site locations. A multivariate analysis similar to the predictive model developed by Hurlbett(1976) for northwestern Colorado may be useful in pinpointing other environmental factors of importance.

Although the intervals are generally rather large, mesa top/terrace/bench has the widest range. This is due to the broad classification of the landform. Martin(1977:11) working with the same sampling scheme in the area north of the Uncompahgre Plateau, suggests separating mesa tops from terraces and benches. Confidence intervals calculated for mesa tops alone show much more reasonable bounds. An additional problem is the categorization of land into one of the landforms, it is often difficult to assign areas into one or another landform, e.g., poorly defined canyon rims which are actually a series of short slopes or benches. Talus slopes are particularly difficult, in that they often have flat areas (benches) on the slope. Many talus slopes in this region have numerous small flat areas, some of which do not appear on topographic maps. Field workers must estimate what percent of the quadrant is flat (terrace and bench) and what percent is sloping (talus), a time consuming process which

involves unavoidable errors. The problem is aggravated by the presence of cultural material on these small benches, an occurrence which is not uncommon.

The figures for canyon rim and outlying areas are thought to be representative, although estimated number of sites per quarter-section for canyon rim will probably increase with additional information.

Estimated number of sites per quarter-section of valley bottom are possibly slightly high. The areas surveyed are tributaries to the main rivers (the San Miguel and Dolores), and further inventory of the tributaries and creeks in the region is needed. Large portions of the San Miguel and Dolores Rivers have been previously surveyed (Breternitz, Newsom, and Toll 1973; Toll 1975, 1976, 1977) and while there are sites in the canyon bottoms, many areas of potential site location were not used, preference apparently being given to benches above the river (Toll 1975:36, 1976:39-40).

Despite the small amount of data and the inherent problems with the sample, inferences can be made about the nature and distribution of sites in the resource area. The area has been extensively used over a long time span by people with a hunting and gathering or Archaic Stage adaptation. The remains of this use are sites consisting mainly of chipped stone, with ground stone being occasionally found and ceramics rarely associated. There is almost no evidence of the type of structures used for shelter, although the remnants of brush wickiups have been reported in the area and in adjacent areas (Douglas Scott, personal communication), and overhangs in the sandstone formations were utilized. The sites range from small, contained, and concentrated lithic areas (20 flakes or less) to extensive areas with mixed dense concentrations and sparse scatters,

sometimes covering startlingly large amounts of land. Transitory campsites are represented, as are areas inhabited for either longer durations, or more numerous times (repeated seasonal use), or both. Also present are the remains of special use or activity sites which accompany a hunting and gathering subsistence - lithic source areas, areas of tool preparation, and resource processing areas.

The figures in Table 2 indicate a non-random correlation of sites with types of landform. Specifically, sites are most numerous on the rims of canyons directly above the rivers and creeks in the area. Draws and intermittent drainages which bisect the canyon walls also have many sites located along them. Sites are also located on flat terraces and bench areas on the talus slopes above the drainages, and on the low gravel terraces at the base of talus slopes adjacent to the floodplains of drainages. The rims of the higher mesa tops do not have sites; the sites on mesa tops are generally located next to small intermittent washes and drainages away from the rims. The flat, open mesa tops do not appear to have been occupied. Likewise, the flat, open regions of Dry Creek Basin, Disappointment Valley, and Gypsum Valley (outlying areas) show few cultural remains; however, the low ridges and benches around the perimeter of these areas are known to contain sites, as do the areas adjacent to the Dolores River.

No association of sites with either soil or vegetation were noticed during this project. Martin(1977:86) and Buckles(1971:1197) both discuss a relationship between site density and vegetation on the Uncompahgre Plateau, i.e., there is an apparent decrease in site density as the pinyon-juniper forest decreases in density. This relationship was not observed in the San Miguel Resource Area, possibly due to the small

amount of land inventoried and the large amount of disturbance, particularly chaining.

There is an association of sites in the resource area with localities providing a view. The majority of sites are situated where a good view of at least a portion of the surrounding terrain is available. Jochim(1976:50) rates view as being one of the three main factors determining site location for hunter-gatherer societies. There are obvious, and probably insurmountable difficulties in trying to quantify a variable such as view, underlining the problem of trying to make statistically valid predictive statements about regional site locations and numbers.

The settlement pattern in the San Miguel Resource Area, in terms of association of sites with landforms, is remarkably similar to that found by Martin(1977:17) on the Uncompahgre Plateau. Williams(1976), after inventorying portions of that section of the Uncompahgre National Forest which lies within the San Miguel Resource Area, reports that most sites were found along the canyon rim, in this case the rim of Naturita Canyon. Sites were also located along the drainages which bisect the main canyon, and a few smaller, apparently more transitory sites were found in the interior, behind the canyon rims. Prehistoric sites around that portion of the Dolores River which is in the resource area are known to cluster around confluences with tributaries. This is viewed as a function of the accessibility the side canyons provide, both to the river and to ecozones different from the main canyon. The more inaccessible portions of the canyon, such as the Serpentine Canyon, were infrequently used and contain few sites(Toll 1977:168). Ward-Williams(1976) reports that sites in the San Juan National Forest also follow this pattern of distribution. The areas surveyed were around Dolores Canyon

and Narraguinnep Canyon, south of the San Miguel Resource Area, and sites were primarily found on canyon rims and along intermittent streams. Large, open park areas were devoid of cultural material. There appears to be a continuity, then, in the pattern of site location, extending from the Gunnison and Uncompahgre Rivers on the north and east, to the southern bend in the Dolores River, and at least as far west as the Colorado - Utah border.

According to Jochim's (1976:47-50) study of ethnographic data on hunter-gatherer settlement patterns, proximity of economic resources is a major factor influencing settlement location. The similarity in the pattern of site locations in the San Miguel Resource Area to areas to the north and south thus suggests the same basic strategy of resource exploitation was being pursued across a large part of the Colorado Plateau. Local variations in site distribution within this region are expected, and can be attributed to variations in the location and productivity of local ecozones in reference to economic resources, geology (accessibility of areas, presence of sources of lithic material, overhangs), and to opportunism of the prehistoric peoples in their relations with the environment. If future surveys in the San Miguel Resource Area and in surrounding areas confirm this regional settlement pattern, and if artifact types and site functions are shown to have a similar continuity for the region, then the term "Uncompahgre Complex" may prove to be misleading with its implied geographical limitations.

In addition to the nomadic hunter-gatherer represented, portions of the resource area were used by a population which practiced horticulture, constructed masonry structures, and used, and probably produced ceramics. Evidence of this sedentary or semi-sedentary adaptation

seems to be most dense in West Paradox Valley. Structural sites are also known to exist near Cottonwood Creek, Naturita Creek, Tabeguache Creek, and Campbell Creek, all tributaries of the San Miguel River, and near Roc Creek, a tributary to the Dolores River. Two nonstructural ceramic sites were located in West Paradox Valley during this project. The presence of ceramics as well as manos indicates that these sites are related, in some yet to be defined fashion, to the structural sites in the valley. No new structural sites were located during the survey. Toll(1977:157-168) is recommended for a discussion of location, traits, and possible cultural affiliations of this manifestation. In addition, he points out the archaeological problems and questions concerning this adaptation which deserve further study(181-182).

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